REMARKS

By this Amendment, claims 1-10, and 12-14 are amended to merely clarify the recited subject matter. Claims 11 and 15-17 are cancelled without prejudice or disclaimer and new claim 18 is added to more fully claim the disclosed invention. Claims 1-10, 12-14 and 18 are pending.

The pending claims have been amended to conform with US practice and overcome the rejection under 35 U.S.C. 101.

Claims 1, 2, 4-10 and 14 were rejected under 35 U.S.C. 102(b) as being anticipated by Rao et al. (US 6,222,932; hereafter "Rao"), claim 3 was rejected under 35 U.S.C. 103(a) as being obvious from Rao in view of Ahn (US Pub. 2003/0031377), claims 11 and 25 were rejected under 35 U.S.C. 103(a) as being obvious from Rao, claims 12, 13 and 18 were rejected under 35 U.S.C. 103(a) as being obvious from Rao in view of Xu (US 2004/0059918) and claim 16 was rejected under 35 U.S.C. 103(a) as being obvious from Rao in view of Smith (US 6,018,748).

Applicant traverses the prior art rejections because the cited prior art references, analyzed individually or in combination, fail to teach or suggest all the features recited in the rejected claims. For example, the cited prior art fails tot each or suggest the claimed watermark insertion or detection technology recited in the rejected claims. More specifically, the prior art fails to teach or suggest the claimed invention wherein the watermark embedding process is controlled by at least one embedding parameter, the value of the embedding parameter being dependent upon the bit-rate of the compressed video signal.

Rao discloses a system and method that automatically adjusts watermark strength of a watermarked image based on the content of the image. The described system includes a process by which the correct watermark strength is estimated with a model of preferred watermark strength based upon human perception as measured with a test group. Preferred watermark strength of a watermark within a watermarked reference image is determined and parameter constants associated with measured image texture values for the reference image are then determined. Image texture values are measured for a particular image to be watermarked, and these determined parameter constants are used to predict the strength of the watermark for the particular image. Thus, images are watermarked by modifying the luminance of those pixels that fall within a mask specifying the watermark design. In this way, the chromaticity of the pixel

remains constant but the luminance changes. The amount by which the luminance is changed is dependent on the desired strength of the watermark: a stronger watermark demands a larger change in the luminance. Thus, in Rao, the watermark embedding operations are controlled based on the content of the video images themselves, i.e., based on the texture value detected in the images.

To the contrary, the claimed method does not involve pixel processing or properties relating to image or video content as in Rao. Rather, in accordance with the claimed invention, watermark information is inserted into the compressed video signal dependent on the bit-rate. As is understood by one of ordinary skill in the art, in video compression, the bit-rate is independent of the bits used to represent the video images to be transmitted; rather, the bit-rate used to compress a video signal is subject to standardization and is not based on the original video signal or images to be compressed. As evidenced in Table 1 of Applicant's specification, various bit-rates are used for various applications including High Definition; however, those bit-rates are not specific to particular content.

As is understood by one of ordinary skill in the art, the bit-rate determines the amount of data to be transmitted; therefore, in a lossy compression, the losses in the compressed video signal are also determined by the bit-rate. Accordingly, a low bit-rate will cause large data losses resulting in poor video quality after decompression; alternatively, a high bit-rate will cause small data losses enabling high quality video transmission for the same original video signal.

The Office Action asserted that Rao discloses a method that relates to a bit-rate because, according to Rao, the Red (R), Green (G) and Blue (B) channels are typically represented by an 8-bit or 16-bit value, i.e., bit-depth. The Office Action particularly referred to col. 3, lines 54-63 as teaching a watermark embedding process controlled by at least one embedding parameter, the value of that embedding parameter being dependent upon the bit-rate of the information signal. However, that passage of Rao merely teaches that:

> An apparatus and method determines a watermark strength of a watermarked image, the watermarked image formed from an image and an image watermark, the strength level corresponding to a reference watermark strength of a reference image having a set of parameters associated with a measured texture value of the reference image. The apparatus and method measure a texture value of at least a portion of the image; and calculate the watermark strength based on the measured texture value and the set of parameters.

The Office Action hypothesized that, in Rao, the watermark strength is calculated based on the measured texture value and the set of parameters where the parameters are controlled by the texture value of the reference images. Thus, the Office Action asserted that, Rao's "texture value" constitutes the claimed "bit-rate" because a higher texture value provides a higher quality image and, a higher "bit-rate" also provides a higher quality image. Thus, the Office Action asserted that Rao's disclosure of basing the watermark strength on texture value renders Applicant's claimed invention unpatentable because, in the Office's characterization, "texture value" must be equivalent to "bit-rate."

However, this understanding is incorrect. As explained above, in the claimed invention, the bit-rate is chosen independent of the information (video) to be compressed; this is because, as explained above, the bit-rate is set according to a video compression standard not video signal content. Thus, the invention is based on the concept of embedding a watermark in the compressed video signal, irrespective of the actual content of the original video signal, the number of pixels, the bit-depth of the original video signal etc.

In the Office Action (see page 6), the Office asserts that Rao teaches that the "the bit-rate influences the calculation of the texture value." However, Rao fails to mention the concept of bit-rate or any relationship to the disclosed "texture value." This should not be surprising considering that the disclosed "texture value" is a metric associated with content of a signal and, as explained above and in Applicant's specification, bit-rates are not set based on content but are set to conform to various standards. Thus, if the Office continues to maintain that "bit-rate influences the calculation of the texture value" (as the concept texture value is disclosed in Rao), Applicant submits that the Office must provide documentation to support this assertion and an explanation on the record as to why this inference or characterization of inherency must be correct.

Thus, Applicant submits that Rao fails to teach or suggest the claimed invention wherein the watermark embedding process is controlled by at least one embedding parameter, the value of the embedding parameter being dependent upon the bit-rate of the compressed video signal. The other cited prior art references fail to remedy these deficiencies of Rao. Accordingly, the claimed invention is patentable over the cited prior art.

For all of the above reasons, withdrawal of the rejection of the pending claims is respectfully requested. In view of the above, it is submitted that all of the pending claims are in

condition for allowance and such action is respectfully requested. If there is any issue remaining to be resolved, the examiner is invited to telephone the undersigned at (202) 371-6371 so that resolution can be promptly effected.

It is requested that, if necessary to effect a timely response, this paper be considered a Petition for an Extension of Time sufficient to effect a timely response with the fee for such extensions and shortages in other fees, being charged, or any overpayment in fees being credited, to the Account of Barnes & Thornburg LLP, Deposit Account No. **02-1010** (48588-47162).

Respectfully submitted,

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